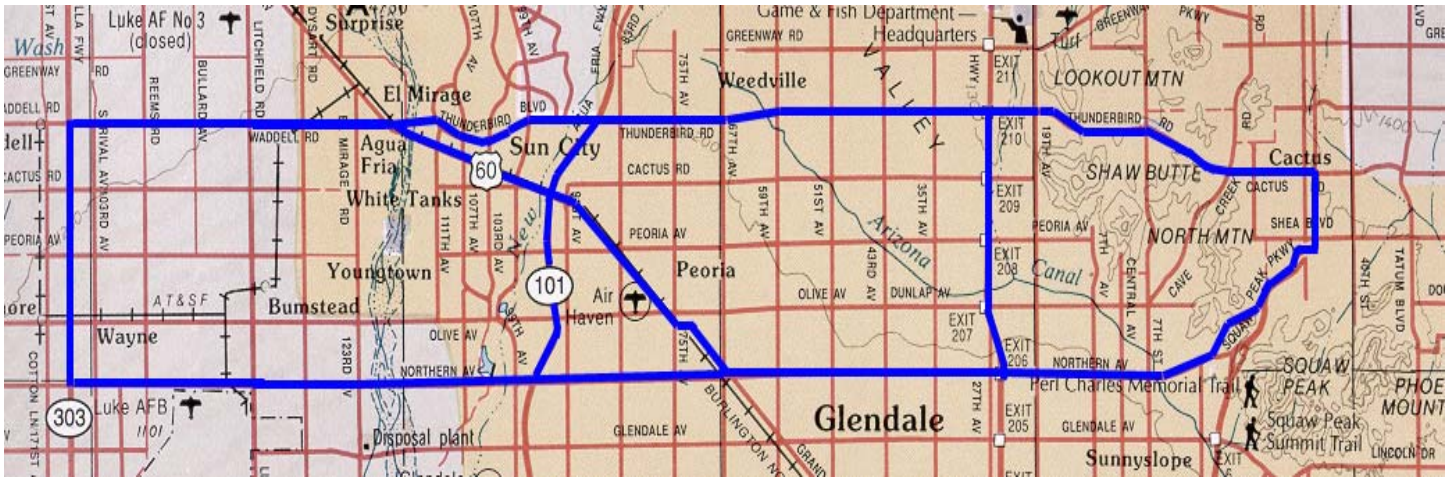
EAST-WEST MOBILITY STUDY

WORKING PAPER # 2 – DRAFT

CURRENT STUDY AREA CONDITIONS AND MOBILITY ISSUES



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December 2001

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I. INTRODUCTION

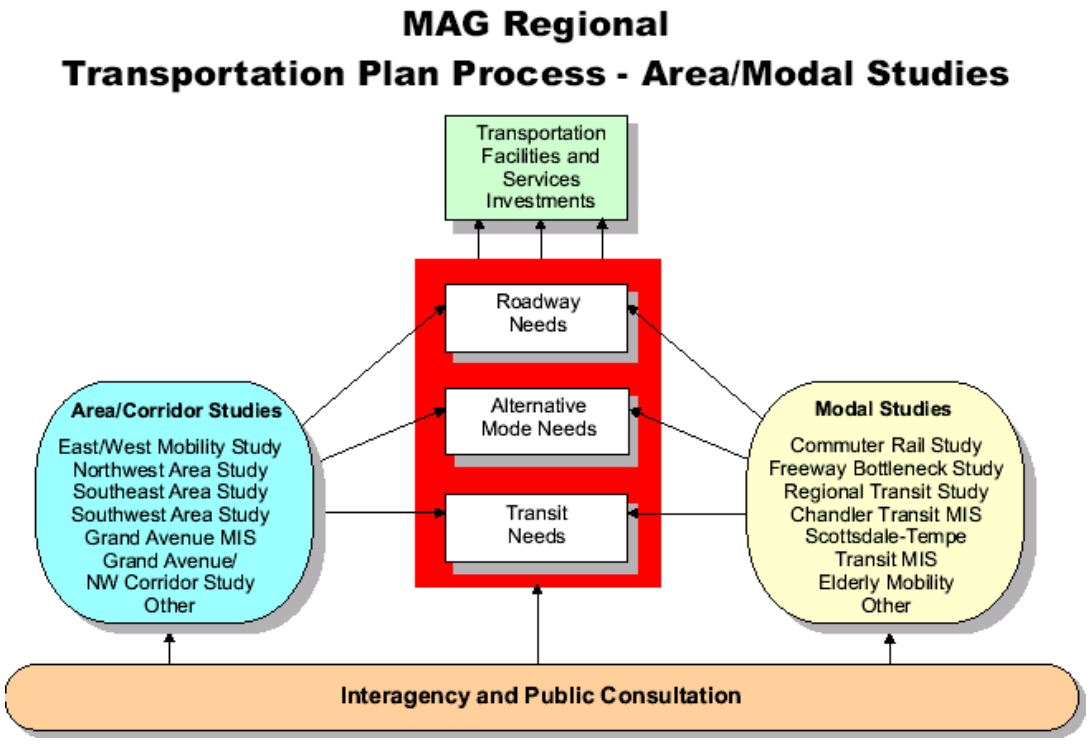
The East-West Mobility Study is one element of the Maricopa Association of Government's (MAG) Regional Transportation Planning Process. The East-West Mobility Study area is bounded by Thunderbird/Waddell Road on the north to Northern Avenue on the south; and Loop 303 on the west to State Route (SR) 51 or Squaw Peak Freeway on the east. The Study will assess options for east-west mobility and traffic flow improvements within the project area. This study will identify a corridor or means of transportation improvements that link the east and west areas of the valley.

This working paper is intended to address current study area conditions and mobility issues. This paper has also been prepared to inform the affected public and transportation decision makers about the existing conditions and transportation issues within the study area.

II. STUDY BACKGROUND

Maricopa County is expected to continue to experience major population increases and is forecast to grow from approximately 3.1 million in 2000 to 6.3 million in 2040. This expected growth is driven by migration from other states and immigration from Latin America. The Regional Transportation Planning Process is intended to address the increased demands associated with these population increases. The East-West Mobility Study is one part of the overall MAG Regional Transportation Planning Process. This process is shown in Figure 1.

Figure 1 – MAG Regional Transportation Planning Process



III. STUDY AREA

The study area is bounded by Thunderbird/Waddell Road on the north to Northern Avenue on the south; and Loop 303 on the west to SR 51 on the east. Figure 2 shows a map of the study area.

IV. OVERVIEW OF THE EAST-WEST MOBILITY STUDY PROCESS

The study will assess options for east-west traffic flow improvements within the project area and will include an assessment of current traffic demands and facility characteristics, estimates of future traffic demands, development of alternative East-West Mobility Strategy Packages, and a screening process that leads to a Preferred East-West Mobility Strategy Package. Evaluation criteria will be developed as the study process progresses, with this working paper contributing as background for their development.

V. PUBLIC INVOLVEMENT / COORDINATION

Public involvement opportunities will be provided throughout the decision-making process. The study also includes comprehensive agency and public involvement components to ensure active community and governmental agency involvement throughout the study process. For this working paper each of the municipalities within the study area were interviewed to better understand their transportation issues and community's concerns.

Public meetings will be used to present study findings and to solicit public input on project issues, development of alternatives, and evaluation of alternatives and final east/west mobility recommendations.

VI. CURRENT STUDY AREA CONDITIONS

The current study area conditions were determined by a through review of existing transportation studies and traffic data. A summary of all documents that were reviewed is located in Appendix A. This section will summarize existing transportation facilities by facility type, area type or land use, number of lanes, and traffic volumes. Other data that was reviewed and summarized includes other modes of travel, transit, bicycle, and pedestrian facilities.

Facility Type

MAG uses roadway classifications similar to the state and federal functional class system to code the travel demand model highway network. The year 2001 highway facility types are classified into four basic classifications: Freeway, Expressway, Arterial, and Collector. All facilities classifications within the study area are shown in Figure 3. The major east/west highway network includes Thunderbird Road/Waddell Road, Cactus Road, Peoria Avenue, Olive Avenue, and Northern Avenue, which are all, classified as arterials. There are three north/south roadways that are classified as freeways and they include Loop 101 (Agua Fria Freeway), I-17 (Black Canyon Freeway), and State Route 51 (Squaw Peak Freeway). All of the remaining north/south roadways are considered arterials. The roadways within the study area classified as

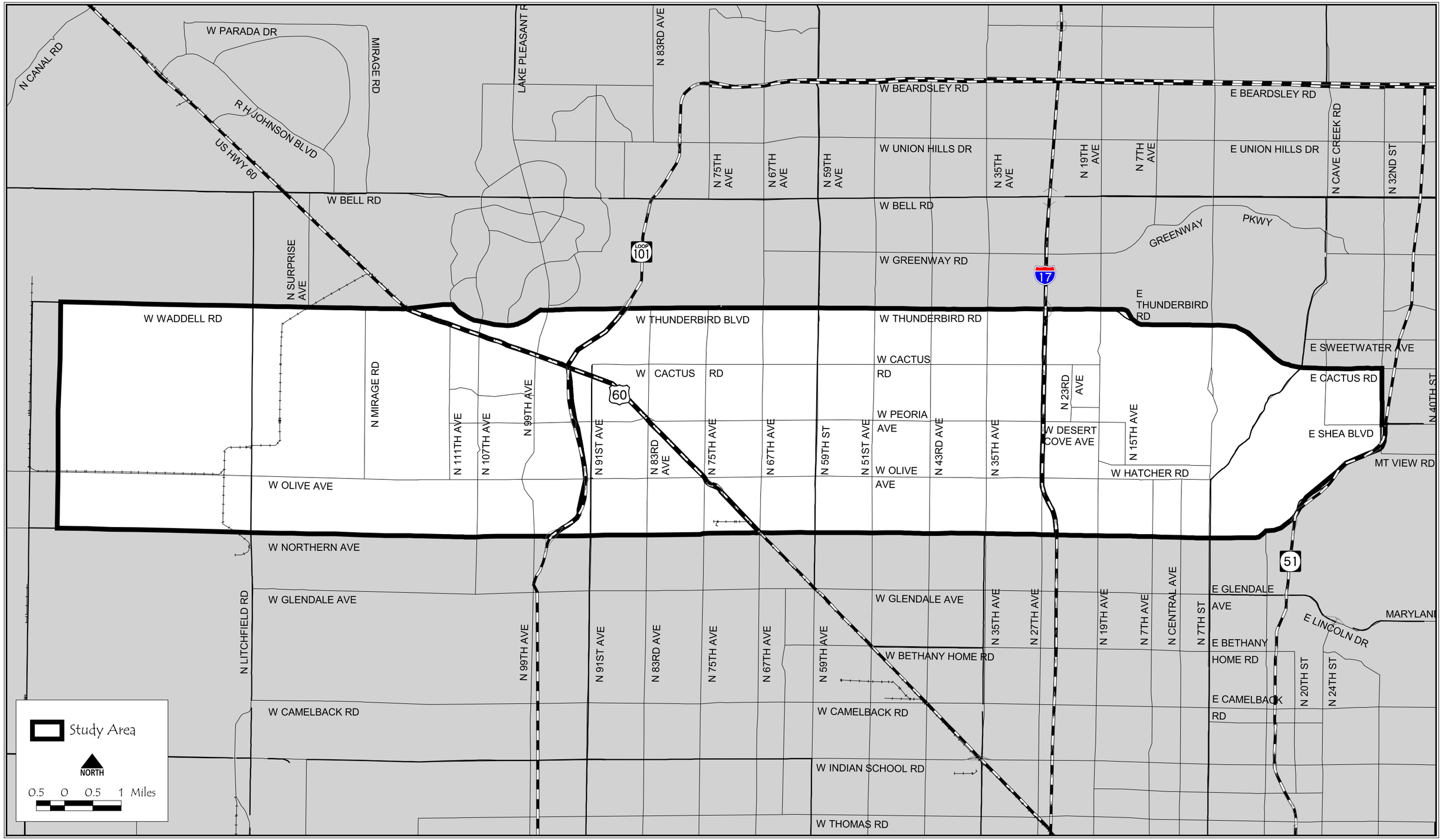


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FIGURE 2:
Map of Study Area

East-West Mobility Study

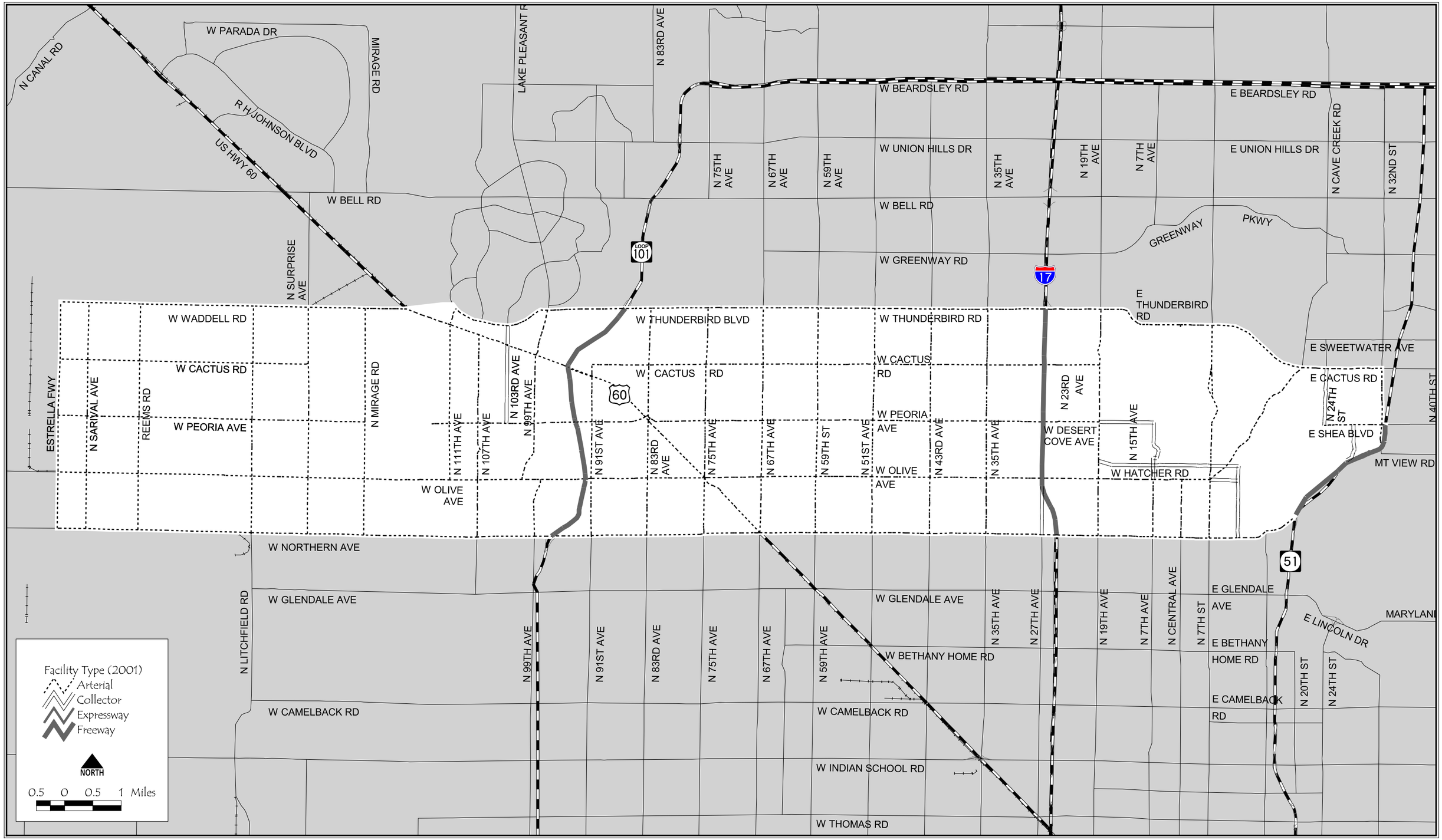

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FIGURE 3:
Facility Type

East-West Mobility Study

collectors are: 103rd Avenue, 7th Avenue between Olive Avenue and Peoria Avenue, 12th Street between Northern and Dunlap Road, Peoria Avenue between 19th Avenue and 7th Avenue, and Dunlap Road between 12th Street and 19th Avenue.

Area Type

There are four different area types identified in the MAG travel demand model within the East/West mobility Study area. They are Urban, Urban Fringe, Suburban, and Rural. Figure 4 shows the area types that border each of the major facilities within the study area. From the west study boundary Loop 303 (Estrella Freeway) to approximately Dysart Road is considered a rural area type. Most of the area between Dysart Road and Loop 101 is considered suburban area type. The Northern section of the study area from 99th Avenue to 19th Avenue and between Thunderbird Road to Peoria Avenue is classified as urban fringe. The section between 67th Avenue and 19th Avenue from Peoria Avenue to Northern Avenue is considered urban. The very eastern section between 19th Avenue and State Route 51 is urban fringe area type. Moving from west to east, the following characteristics can be found along the major roadways.

Specific land uses along Thunderbird Road include mostly residential homes. The speed limit drops in Sun City to 30 mph and as low as 25 mph in some sections. The land use west of El Mirage is mostly farms or agricultural uses with a few new subdivisions being started.

On Cactus Road west of Dysart Road these same agricultural uses can be found; east of Dysart Road is where single and multi-family residential homes begin; Cactus Road ends at the Agua Fria River. Cactus Road is renamed Alabama Road through Sun City and Youngtown and has lower speed limits. Cactus Road begins again at 91st Avenue. East of 91st Avenue the major land use is residential but there seems to be right-of-way available for potential roadway widening. Cactus Road ends at 19th Avenue at the base of Lookout Mountain.

Peoria Avenue just west of Dysart Road is rural in nature and consists mostly of farms, east of Dysart Road is where the residential homes begin. Peoria Avenue ends at the Agua Fria River. Peoria begins again at 111th Avenue (east side of river) and enters Sun City with lower speed limit at 99th Avenue. The intersection of 83rd Avenue/Peoria Avenue/Grand Avenue is very difficult and complicated. The intersection generates high volumes of traffic and is surrounded by commercial land uses; travel speeds are low. Peoria Avenue from Grand Avenue to 35th Avenue is mostly single and multi-family residential homes. The land uses change to industrial between 35th Avenue and 19th Avenue. Peoria Avenue is mostly residential east of 19th Avenue and the road ends at 7th Avenue. Peoria Avenue once again picks up from 7th Street to Cave Creek and becomes Shea Boulevard at 22nd Street.

Olive Avenue west of El Mirage Road is bordered by agricultural land use. The intersection geometries of Loop 303 and Olive Avenue are poor due to the location of the railroad crossing on the north leg of the intersection. There are scattered residential pockets west of 75th Avenue all the way to El Mirage Road. Olive Avenue is industrial from I-17 to 23rd Avenue. Olive Avenue is renamed Dunlap Avenue at 43rd Avenue and continues to 7th Street.

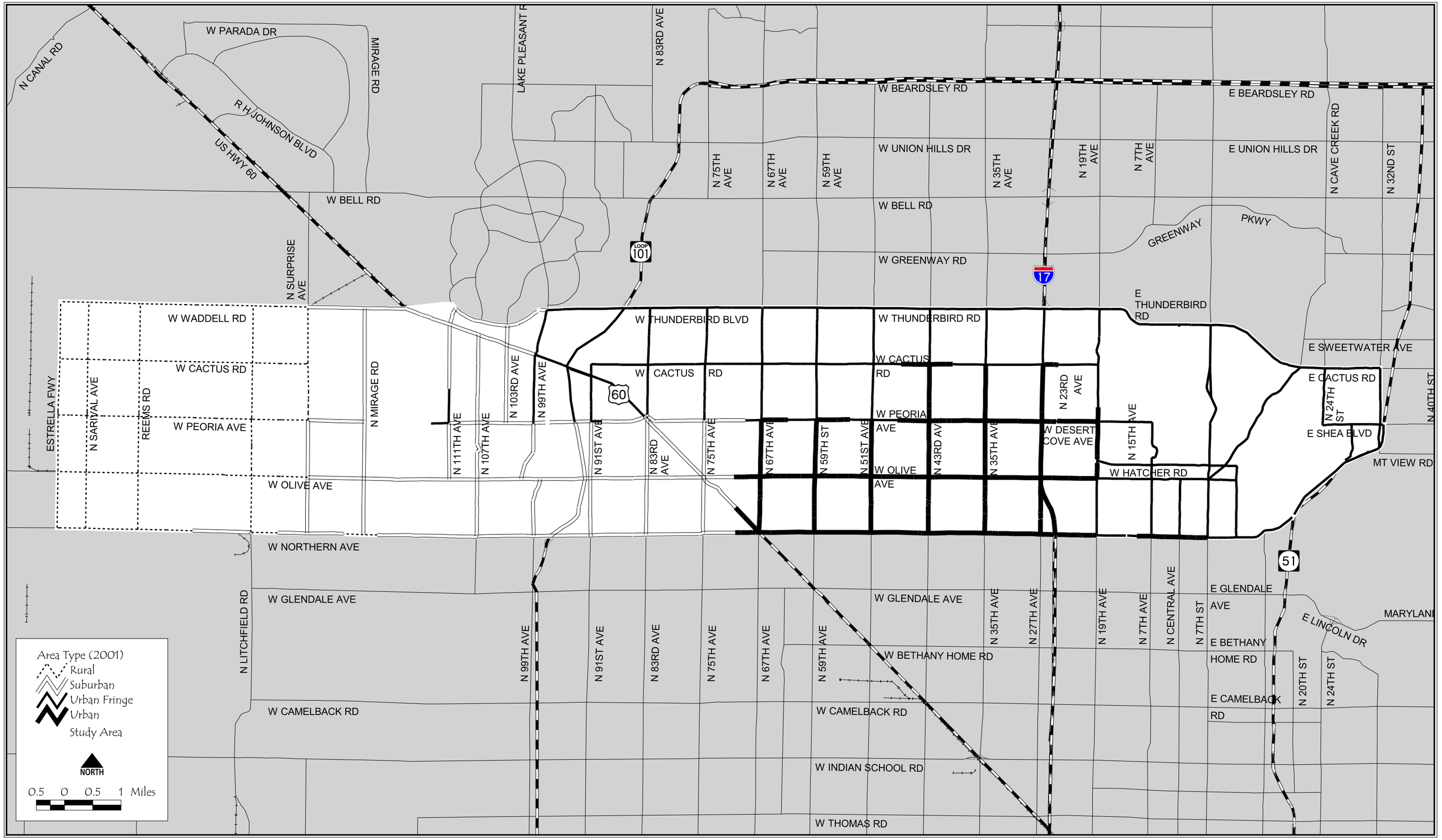

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FIGURE 4:
Area Type
East-West Mobility Study

Northern Avenue from Loop 303 to El Mirage Road consist of agricultural land uses. The intersection geometries of Loop 303 and Northern Avenue are poor due to a large irrigation ditch that follows along the north side of Northern Avenue. From El Mirage Road to 67th Avenue the land use is low density residential with some farms. Northern Avenue remains residential from 67th Avenue to 12th Street but changes to offices from 12th Street to SR 51.

The existing (year 2001) socio-economic data that was generated for the travel demand model is comparable to the land use data discussed above. The Traffic Analysis Zones (TAZ) for the East/West Mobility Study area were identified and the associated socio-economic data was tabulated. Detailed household, population, and employment data is presented in Appendix C. The following table summarizes the socio-economic data for the study area.

TABLE 1 – Year 2001 Socio-Economic Data Summary

Residential Population in Households	302,064	
Residential Population in Group Quarters	3,932	
Transient Population	3,466	Total Population
Seasonal Population	5,630	315,092
Residential Households	120,237	
Group Quarters Households	932	
Transient Households	2,577	Total Households
Seasonal Households	2,945	126,691
Other Employment	15,305	
Public Employment	12,539	
Retail Employment	36,194	
Office Employment	30,064	Total Employment
Industrial Employment	24,452	118,554

There are approximately 88 traffic analysis zones within the East/West Mobility Study area. The total population of the area is over 315,100 persons, with approximately 95 percent of the people living in residential (single and multi-family dwell units) households. There are approximately 126,700 households with an average of 2.48 persons/household. The study area supports over 118,500 employees with 31 percent in retail, 25 percent in office, 20 percent in industrial, 13 percent in other, and 11 percent in the public employment sectors.

Number of Lanes and Existing Traffic Volumes

The number of lanes for each of the major highway facilities within the study area is shown in Figure 5. The existing two-way daily traffic volumes are shown in Figure 6.

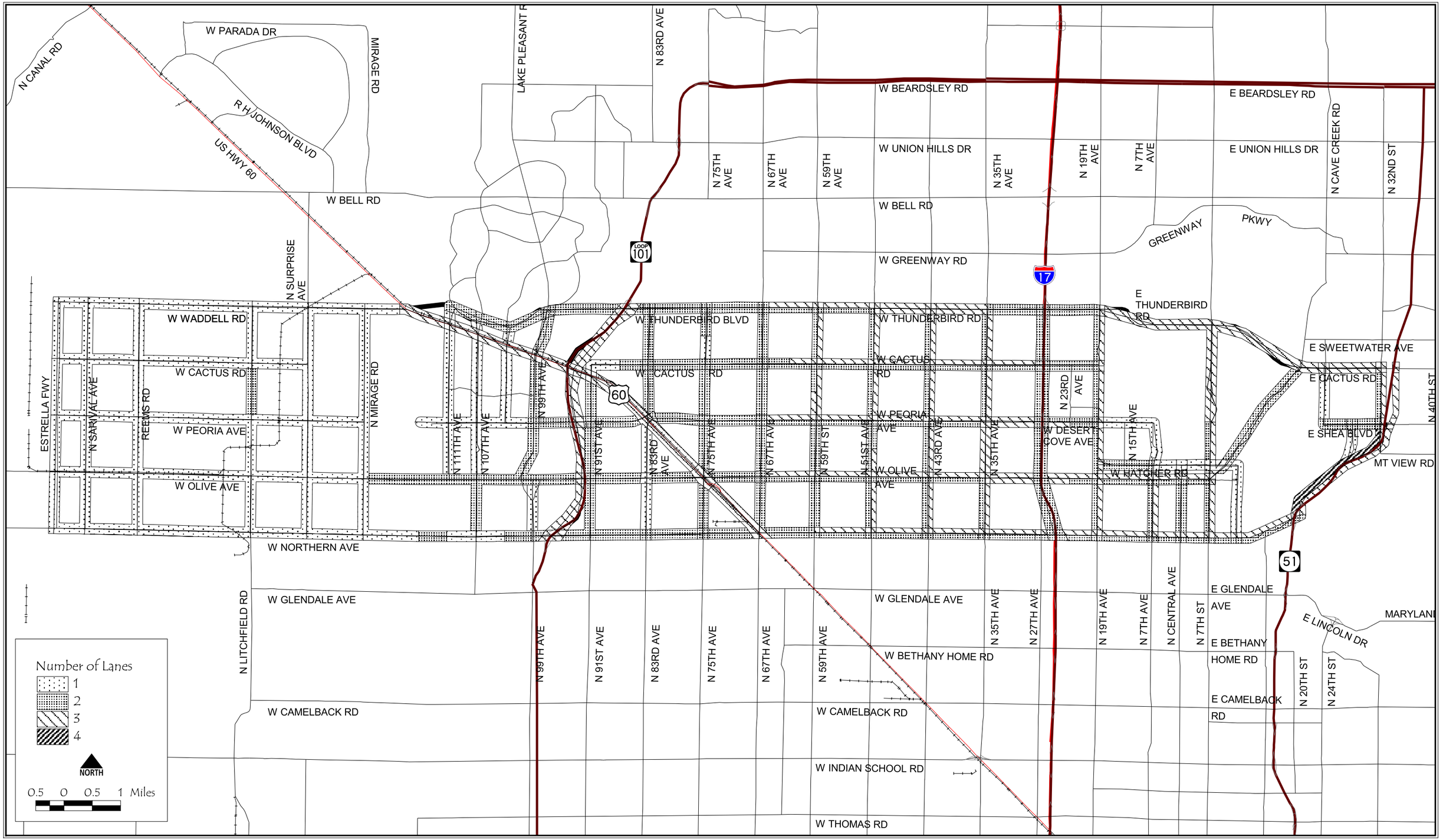

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FIGURE 5:
Number of Lanes

East-West Mobility Study

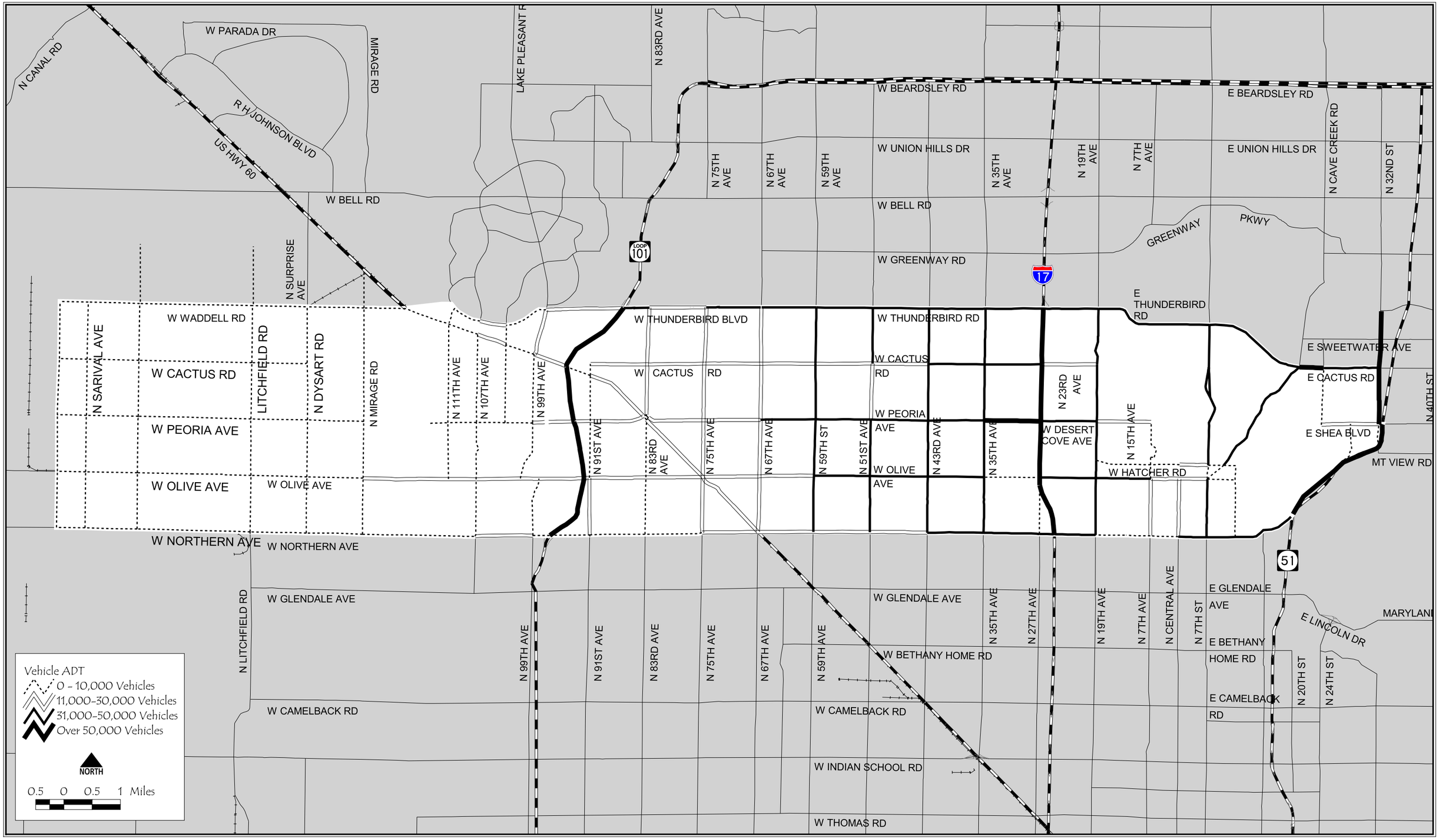

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FIGURE 6:
Existing Daily Traffic Volumes

East-West Mobility Study

Below are brief descriptions of the geometries of the major east/west and north/south roadways and accompanying traffic volumes.

Waddell Road is a two-way east/west arterial that is one mile north of Cactus Road and runs from Grand Avenue in the east through Loop 303 in the west. In this stretch, it is a two-lane arterial that carries between 4,000 and 8,000 vehicles per day. Waddell Road is interrupted by the Sun City and becomes Thunderbird Road on the east side.

Thunderbird Road is a two-way east/west arterial that is north of Cactus Road and runs from Cave Creek Road in the east to 111th Avenue in the west. From Cave Creek Road to 19th Avenue it is a six-lane arterial that carries between 38,000 and 44,000 vehicles per day. From 19th Avenue to Loop 101 it is a four to six-lane arterial that carries between 30,000 and 45,000 vehicles per day. From Loop 101 to 111th Avenue it is a four-lane arterial that carries between 10,000 and 30,000 vehicles per day.

Cactus Road is a two-way east/west arterial that is north of Peoria Avenue. It is broken into three unconnected segments between the limits of SR 51 to the east and Loop 303 to the west. The first segment is a six-lane arterial that runs from SR 51 to Cave Creek Road where it carries approximately 50,000 vehicles. The second segment is a four to five-lane arterial that runs from 19th Avenue to 91st Avenue where it carries 9,000 to 36,000 vehicles per day. The third segment is a two-lane arterial that runs from Dysart Road through Loop 303 where it carries less than 1,000 vehicles per day.

Peoria Avenue is a two-way east/west arterial that is north of Olive Avenue and runs from 7th Avenue in the east, dead ends, starts back up at El Mirage Road, and runs through Loop 303 in the west. From 7th Avenue to 19th Avenue it is a two-lane arterial that carries approximately 15,000 vehicles per day. From 19th Avenue to 67th Avenue it is mostly a five-lane arterial that carries between 32,000 and 53,000 vehicles per day. From 67th Avenue to 99th Avenue it is a four-lane arterial that carries between 17,000 and 25,000 vehicles per day. From 99th Avenue to the river it is a two-lane arterial that carries approximately 7,000 vehicles per day. From El Mirage Road through Loop 303 it is a two-lane road that carries less than 1,000 vehicles per day.

Olive Avenue/Dunlap Avenue is a two-way east/west arterial that is north of Northern Avenue and runs from 12th Street in the east through Loop 303 in the west. From Cave Creek Road to 67th Avenue it is a five-lane arterial that carries 28,000 and 43,000 vehicles per day. From 67th Avenue to El Mirage Road it is a four-lane arterial that carries between 4,000 and 20,000 vehicles per day. From El Mirage Road to Loop 303 it is a two-lane arterial that carries between 2,000 and 3,000 vehicles per day.

Northern Avenue is a two way arterial that runs in the east and west direction from SR 51 on the east side through Loop 303 on the west side. From SR 51 to 59th Avenue it is a five-lane arterial that carries between 25,000 and 43,000 vehicles per day. From 59th Avenue to El Mirage Road it is mostly a four-lane arterial that carries between 8,000 and 13,000 vehicles per day. From El Mirage Road to Loop 303 it is a two-lane arterial that carries between 3,000 and 7,000 vehicles per day.

Loop 303 is a two-way north/south arterial that runs through Northern Avenue in the south and through Thunderbird Road in the north. In this stretch, it is a two-lane arterial that carries between 3,000 and 4,000 vehicles per day in a rural environment.

Loop 101 is a two-way north/south freeway that runs through Northern Avenue in the south and through Thunderbird Road in the north. In this stretch, it is a six-lane freeway that carries between 50,000 and 60,000 vehicles per day.

Grand Avenue is a two-way diagonal arterial that runs through Northern Avenue in the southeast through Waddell Road in the northwest. In this stretch, it is a six-lane arterial that carries between 20,000 and 50,000 vehicles per day.

I-17 is a two-way north/south freeway that runs through Northern Avenue in the south and through Thunderbird Road in the north. In this stretch, it is a six-lane freeway with an additional two HOV lanes, which carries approximately 190,000 vehicles per day.

SR 51 is a two-way north/south freeway that runs through Northern Avenue in the south and through Thunderbird Road in the north. In this stretch, it is a six to seven-lane freeway that carries between 56,000 and 160,000 vehicles per day.

A table of roadway network data is located in Appendix B. This detailed table shows facility type, area type, number of lanes by direction, and 24-hour volume counts for the major roadway network within the study area.

Existing Level of Service Analysis

Level of Service data was collected from the ***1998 Maricopa Association of Governments Regional Congestion Study – Final Report – September 2000***. Level of Service (LOS) is a qualitative measure of the traffic operations at an intersection or on a roadway segment. Level of service is ranked from LOS A, which signifies little or no congestion and is the highest or best rank, LOS F, which signifies congestion and jam conditions or the worse rank. Figure 7 shows freeway and intersection level of service that is greater than or equal to LOS D. I-17 has LOS of D or worse in both directions. SH 51 has a LOS of D or E in the northbound direction. At signalized intersections, level of service is calculated for each movement and then is summed in a weighted fashion to yield the LOS for the approach and for the intersection as a whole. There are 15 intersections with a LOS of E and 10 intersections with a LOS of F. Thunderbird Road has the most failing intersections with 8 intersections with a LOS of E or F, while Peoria Avenue, Olive Avenue, and Northern Avenue each have 5 intersections with a LOS of E or F.

Existing Transit Service

The existing transit service for the East/West Mobility Study area is shown in Figure 8. Valley Metro local and express bus routes serve the majority of the arterial roadways from Thunderbird Road to Northern Avenue and from 67th Avenue to SR 51. There are three existing transit centers (Metro Center, Sunny Slope, and Dreamy Draw) and one park and ride lot (Dreamy Draw) that are located within the study area. There is one local bus route that serves Peoria Avenue and runs west to 11th Avenue then heads north to Grand Avenue and 107th Avenue. The western portion of the study is not served by any fixed route transit system at the present time due to the rural setting and limited potential users. Dial-a-ride services are available on a limited basis to most of the study area.

Existing Bicycle/Pedestrian Facilities

The bicycle/pedestrian paths are shown in Figure 9. These regional bicycle/pedestrian paths are east of Loop 101 but as more residential and commercial development occurs

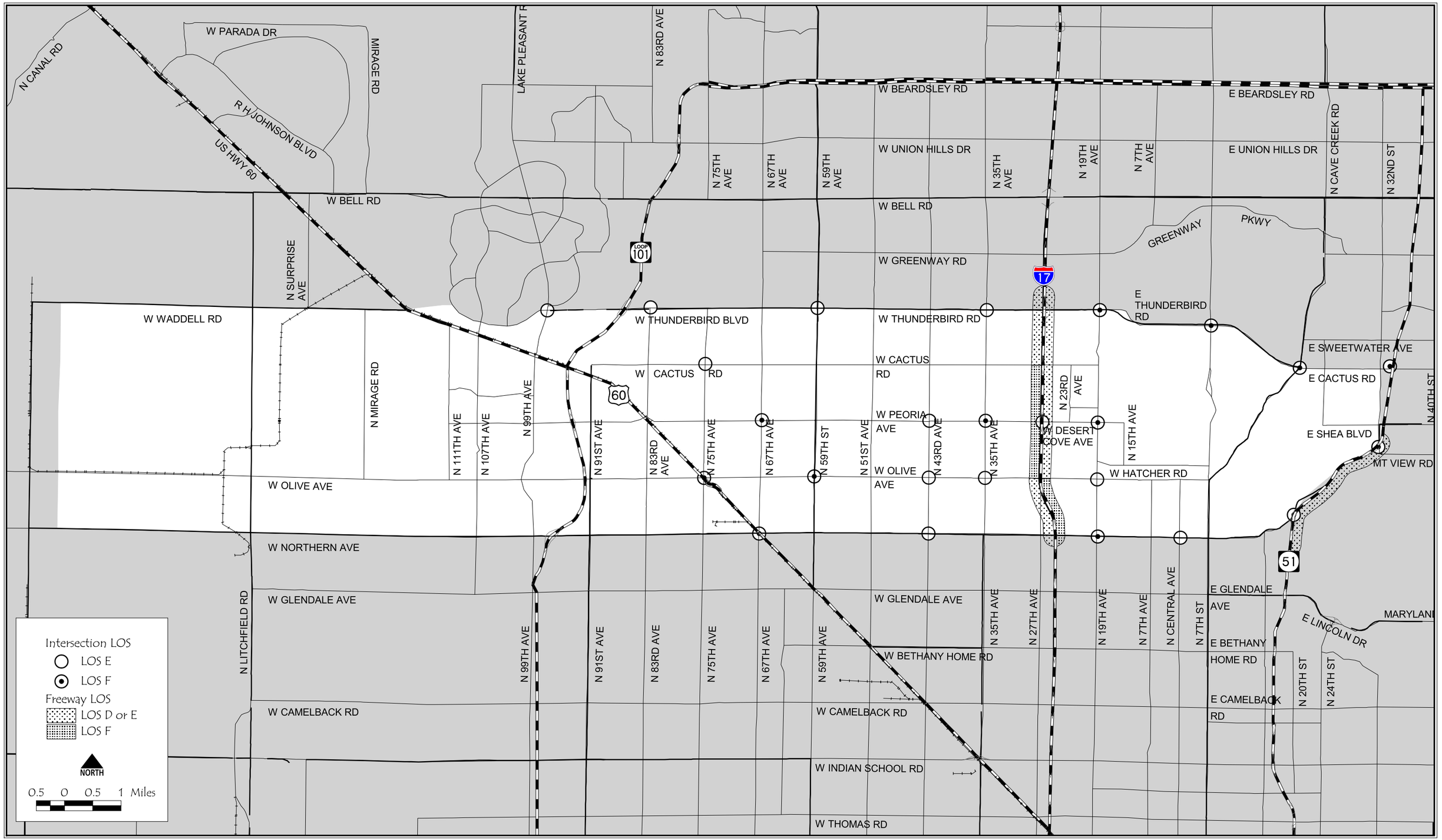

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FIGURE 7:
Intersection and Freeway Level-of-Service
PM Peak Hour
East-West Mobility Study

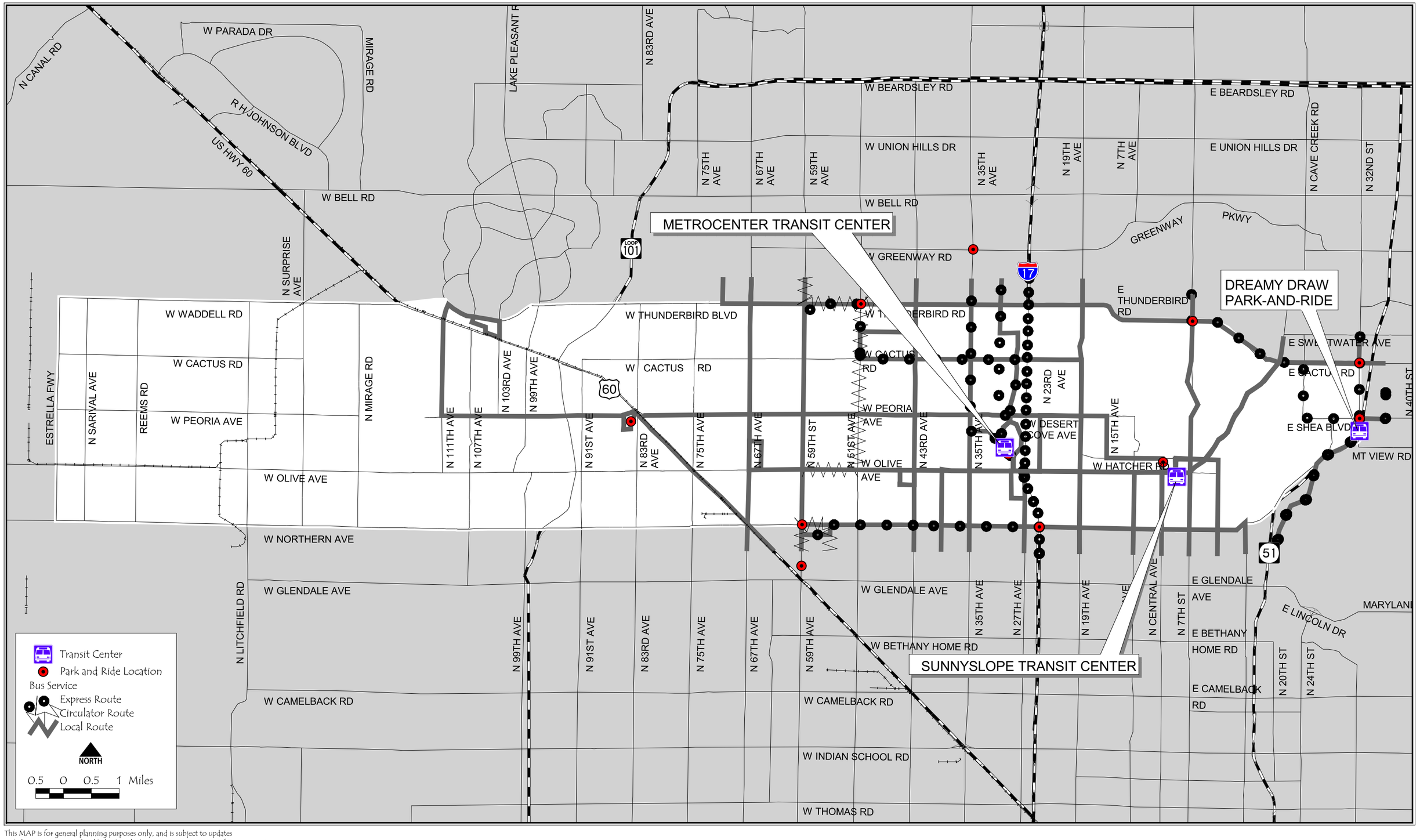

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FIGURE 8:
Existing Transit Service
East-West Mobility Study

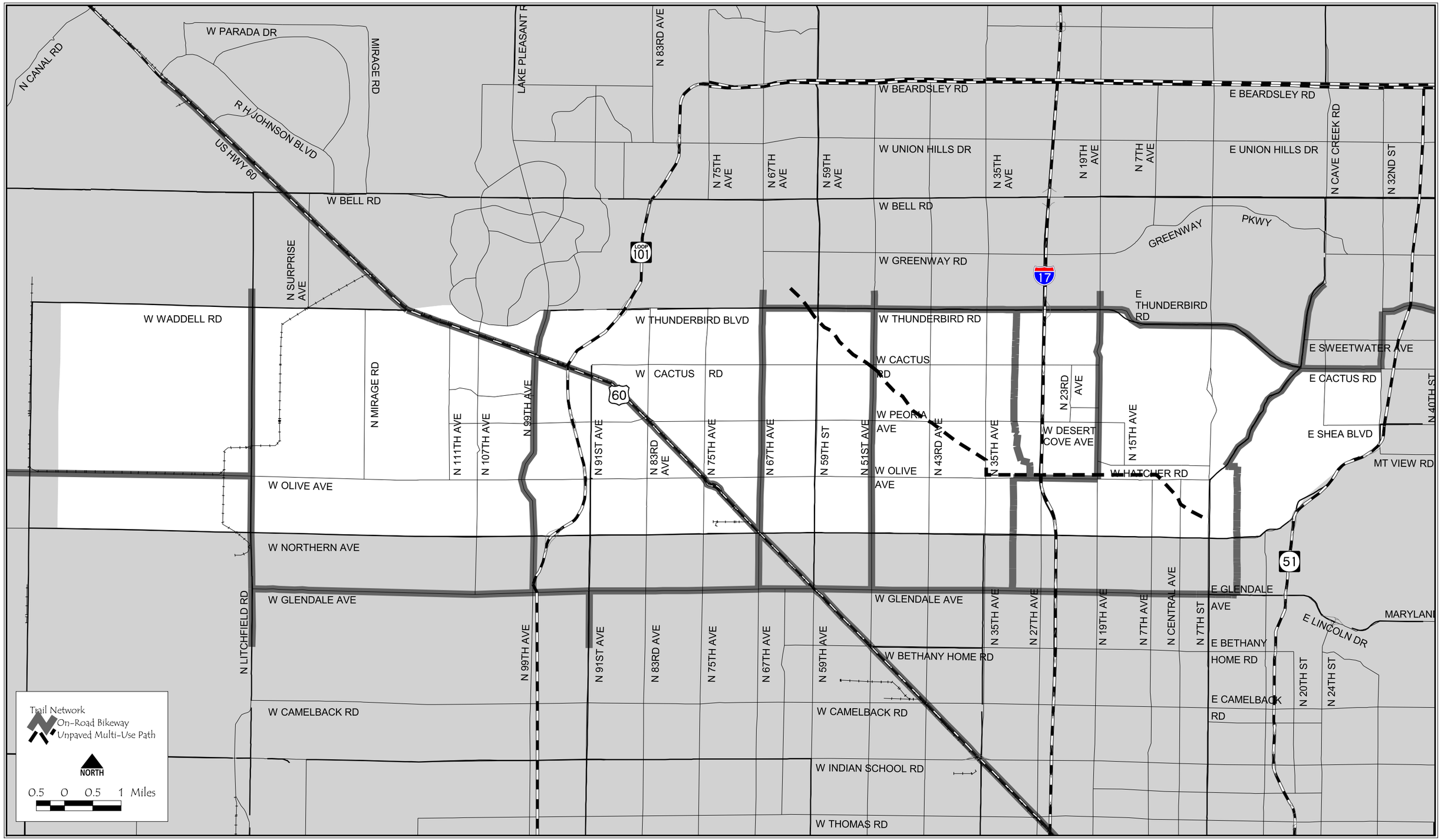

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FIGURE 9:
Existing Bicycle/Pedestrian Facilities

East-West Mobility Study

in the western section of the study area the need for additional facilities will be required. Most of the major east/west and north/south arterials within the residential and commercial areas have sidewalks.

VII. TRANSPORTATION MOBILITY ISSUES

Discussions were conducted with nine public agencies within the East/West Mobility Study area regarding their thoughts/concerns/issues as they relate to the study. These agencies included City of Glendale, City of Peoria, City of Phoenix, City of Surprise, City of El Mirage, Town of Youngtown, Maricopa County Department of Transportation (MCDOT), Arizona Department of Transportation (ADOT), and the Regional Public Transportation Authority (RPTA). The following comments were received from each agency.

Arizona Department of Transportation (ADOT)

- Original thoughts were for an east/west corridor between Camelback Road and Peoria Avenue.
- In the year 2006 the over/under passes along Grand Avenue will be completed.
- Recommendations for the corridor should include more than road improvements.
- Olive Avenue will go over Grand Avenue. 67th Avenue goes over Grand Avenue.
- Talk to MAG about Grand Avenue Study. Speak with Dave French at URS regarding Grand Avenue studies/information.
- ADOT assisted with scope of East/West Mobility Study.

Maricopa County Department of Transportation (MCDOT)

- Traffic interchange studies/preliminary design show that the intersections of Olive Avenue/Loop 303 and Northern Avenue/Loop 303 will have problems. There may be a possible connection of Olive Avenue and Northern Avenue east of the Loop 303 for a better intersection.
- Olive Avenue is a road of regional significance.
- MCDOT will be doing a regional corridor study along Olive Avenue from the Loop 101 to the White Tank Mountains.
- Not set on Olive Avenue as east/west corridor.
- MCDOT concerned about growth to the north of Bell Road.
- Bell Road and Grand Avenue are big issues.
- Northern Avenue not necessarily an issue.
- Don't forget the air base. May be around or may be closed.
- Pay attention to bike routes.

Regional Public Transportation Authority (RPTA)

- Bus pullouts, queue jumpers, and signal prioritization are good tools.
- Bus bays are difficult for buses at congested arterial intersections.
- Funding is a big issue. RPTA would provide more service in the west valley if the funding were there.
- Connectivity to other routes in the system including dial-a-ride is important.
- A route between west valley and the medical centers (Mayo etc) in Scottsdale has always been wanted.
- West valley used to be mostly retirees, now more and more families are moving in, changing the transportation needs.

- Separated grade intersections make transfers between east/west and north/south routes very difficult; ADA issues also come into play.
- The City of Surprise has only two dial-a-ride vehicles and cannot meet the demand.
- RPTA will be looking more into cooperative ventures with various municipalities.
- Bus Rapid Transit (BRT) probably more an option that Light Rail Transit (LRT) in the west valley.
- Neighborhood circulators in the urban areas may be the next step.
- Serious thought should be given to 'permanent park-and-ride lots.

City of Peoria

- There is a need to coordinate with other studies in the area – Northwest etc.
- Street classification map shows Olive Avenue as a road of regional significance.
- Olive Avenue will go over Grand Avenue. 67th Avenue goes over Grand Avenue.
- Thunderbird Road will be critical for Peoria's transit.
- Olive Avenue may be a major east/west route.
- Industrial parks are planned along Olive Avenue.
- Everything along the Loop 101 is zoned industrial.
- Cactus Road is not a good east/west route through Peoria.
- Use freeways or Grand Avenue as connectors if the east/west route is split.

City of Glendale

- There is no reason for an east/west route to be continuous. It can be more than one road or offset in areas.
- Glendale likes Northern Avenue as the east/west route.
- Glendale does not want Northern Avenue to continue as a "Superstreet" through the neighborhoods to the east of 67th Avenue.
- Grade separations in as many locations as possible would be good.
- Would like to see the study show that Northern Avenue is an important part of the regional plan.
- Light Rail Transit (LRT) will probably be on Northern Avenue or Bethany Home Road.
- Make sure the study looks at Grand Avenue.
- Northern Avenue as a choice was committee driven.
- Protect access as soon as possible.
- 30 major intersections in Glendale will be improved in the next 5 years.
- Use models of urban interchanges at open houses.
- Look at the grade separation project, soon to be started in Tucson at Grant/Campbell.
- Get the technical (engineering) groups together from the agencies.

City of Surprise

- Surprise has only one east/west route, which is Bell Road.
- Major routes for Surprise are the Loop 303 and Grand Avenue.
- Key issue for Surprise is crossing the railroad tracks.
- Dysart Road is important.
- Study should look at El Mirage Road and Olive Avenue.
- Grand Avenue could be an expressway but it would not be politically feasible.
- A lot of concern about the northwest part of the city.

- Transit is limited to dial-a-ride.
- A spring baseball complex may be located between Bell Road and Greenway Road, and Bullard Avenue and Litchfield Road.
- Side note – there is a proposed bridge at Peoria Avenue and the river crossing.
- Truck traffic is a major issue.
- Be ready for well-attended meetings from citizens of the City of Surprise.

City of Phoenix

- Olive Avenue is road of regional significance.
- Most of the Phoenix streets are already taken care of.
- Bus bays are good.
- Intersection widening could work (minor widening). Worried about pedestrian crossing times.
- Grade separated intersections are expensive, but a possible concept.
- Minimal changes are probably all you can do. Most of the streets are already built out, like Thunderbird Road, which is already six lanes.
- Probably not in favor of widening anywhere.

City of Youngtown

- Peoria Avenue is bad because it goes through Sun City.
- Olive Avenue is a good east/west alternative.
- Truck traffic is a major concern.
- Youngtown still has about 300 acres to expand along Olive Avenue.

City of El Mirage

- Meeting canceled will reschedule.

Other transportation issues were extracted from the Northwest Area Transportation Study Request for Proposal that was issued by MAG. The East/West Mobility Study area is a sub-set of the Northwest Area Transportation Study area but share some common transportation issues. Specific issues were identified by the local jurisdictions (El Mirage, Glendale, Peoria, Surprise, and Youngtown) in requesting the Northwest Area Transportation Study and include the following (not ranked or in order of priority):

- Rapid growth and development
- Need for transportation planning to address the growth in a timely manner
- Need for a plan and conceptual framework for the integration of surface streets, regional roads, freeways, and transit for the multi-jurisdictional area

Other specific issues identified by local agency representatives include but not ranked:

- An east-west corridor is desired. The East-West Mobility Study will address this issue for a portion of the northwest study area.
- Right-of-way protection for future transportation needs is important.
- ITS needs must be addressed.
- Dial-a-Ride is a major transit issue for the City of Surprise.
- Telework centers should be considered.
- Local community identity should be maintained.

- Downtown activity centers should be addressed e.g. with recommendations for circulator buses. Core downtown areas are very important.
- Local issues should be left to the local jurisdictions, although they may be commented on where warranted. The focus should be on major infrastructure needs.
- Loop 303 should be completed. Residents want a parkway, but may want more in the long term.
- The express bus service should address Bus Rapid Transit.
- The local bus service issue should include local bus circulators.
- Cost-effective alternative approaches, such as vouchers for taxis, should be considered.
- Consideration of alternative growth patterns, such as dispersed growth versus nodes, should be left to the RTP process.

As noted above, the local jurisdictions requesting the Northwest Area Transportation Study have identified some specific issues that are important. Other possible issues are noted below, in no particular order.

- Major access controlled facilities and the needs for added capacity for freeways, expressways and parkways.
- Continuity of the arterial grid system across jurisdictions, “scalloped” streets, and access control issues.
- Local and express bus, and rail needs and integration with the regional system. Fixed route and demand responsive (e.g. dial-a-ride) needs. Park and ride needs including access to regional roads.
- Goods movement within and through the area is a concern.
- Intelligent Transportation Systems (ITS) needs and issues for all modes.
- Bike and pedestrian facilities needs and issues, including possibly design criteria.
- Access control needs and issues along major transportation facilities
- Right of way protection.
- Accident data on specific roadway segments and intersections.
- Land Use: Transportation-related issues.
- Environmental issues.
- Neighborhood Impacts. Protection of neighborhoods is an important issue.
- Downtown activity centers.

There were a number of public agencies that mentioned Olive Avenue as a possible regional corridor that could move traffic east/west. The Northern Avenue corridor was mentioned as a possible roadway that could be used to move people and goods east and west. Other suggestion to improve east/west travel involved transit, bicycle, and pedestrian facilities improvements. Each community has unique local transportation issues that, if they can be improved, will contribute to a better and more efficient regional transportation system.

APPENDIX A

DATA REVIEW SUMMARY

Data Review

1. **MAG FY 2002-2006 Transportation Improvement Program, July 2001 (MAG)** The Transportation Improvement Plan (TIP) serves as a five-year regional guide for the preservation, management, and expansion of the public transportation services including highways, arterial streets, transit, demand manage management, and alternative mode (bicycles, pedestrian, telecommunications, etc.) improvements in Maricopa County. MAG in corporation with ADOT, and the Regional Public Transportation Authority (RPTA) is responsible for the development of the MAG TIP. Figures IV-2 through IV-6 show FY 2002-FY2006 Highway Projects in the Primary Planning Area and associates Tables for highway and transit projects by ADOT and each of the municipalities within the E/W Study Area.

2. **Intelligent Transportation Systems – MAG ITS Strategic Plan Update – April 2001 (Kimley-Horn)** This Study resulted in a "roadmap" that will guide ITS projects and programs in the MAG region for the next 20 years. The following are key elements included in the ITS Plan Update: 20-year ITS Plan; System Architecture; Telecommunication Plan; Implementation Plan (short-, medium-, and long-term); Operational & Implementation Strategies; ITS Training & Capacity Building (TCB); ITS Evaluation Plan.

3. **MAG Long Range Transportation Plan – 2001 Update – July 2001, (MAG)** The Long Range Transportation Plan (LRTP) address all modes of transportation in the region. The Plan is based on a 20-year horizon. This Plan Update is for the year 2021.

4. **1998 MAG Regional Congestion Study – Executive Summary – September 2000 (Traffic Research & Analysis)** and **1998 MAG Regional Congestion Study – Final Report – September 2000 (Traffic Research & Analysis)** The overall purpose of this Study was to provide updated traffic data for the MAG transportation planning process. These data would be used to: 1) the travel demand model is providing reasonable current and future traffic conditions, 2) provide input to regional transportation planning studies, and 3) provide information needed for local traffic studies and roadway design projects. The database was expanded to cover a larger geographic area as well as vehicle classification data. Data was collected at 669 major intersections and approximately 231 directional miles of freeways. 48 hours of data was collected at 606 intersections (1962 approaches) TMC were conducted at 229 intersections from 7-9 AM and from 4-6 PM. Maps include the following: Study Area, Weekday Volume Counts on Freeway, Weekday truck Traffic on Freeway, PM Peak Hour Volumes: HOV lanes, Intersection LOS: PM Peak Hour, LOS for Freeway Non-HOV lanes, PM Peak Hour.

5. **MAG Park-and-Ride Study – Executive Summary – January 2001 (KJS Associates)** This Study identified a regional system of park-and-ride lots to support the regional express bus system, carpooling, and vanpooling. The recommended system includes ten sites for near term development (in the next 5-year) and ten sites for long-term development. Other recommendations included: design guidelines and criteria for lot development, management and operations plan, and programming and implementation strategies. The E/W Study area includes two park-and-ride sites: Loop 101 near Grand Avenue (Peoria) with 442 spaces near term; and I-17 near

Peoria Avenue (Phoenix) with 283 spaces near term. Two park-and-ride sites are bordering Study area: Grand Avenue near Litchfield (Surprise) with 250 spaces long-term; and Loop 101 near Camelback (Phoenix/Glendale) with 505 spaces, long term.

6. **1993 Study of Travel Speed and Delay in the MAG Region – Final Report – March 1995 (Lee Engineering)** The primary purposes of this study was the collection and analysis of travel speed data and intersection stopped delay data at signalized intersections. This data was used as input to the regional transportation model. This data was compared to historical speed data the most recent from 1986. Data was collected Monday through Friday during the following time periods: 7 AM to 9 AM, 10 Am to 2 PM, and 4 PM to 6 PM. The report includes average travel speeds for arterials and freeway, average arterial travel speeds by jurisdiction, historical speed changes and numerous maps illustrating speed and delay data collected.

7. **MAG Regional Bicycle Plan – Revised January 1999 (MAG)** There were three major tasks address in this update 1) identify issues and needs, and refine adopted goals and objectives in light of these issues and needs, 2) develop maps of planned bicycle routes, including on-road and off-road Regional Bicycle Facilities, and 3) address criteria used to select projects for funding, and resulted in changes to the Congestion Management System (CMS) and the Regional Bicycle Task Force (RBTF) rating system. A number maps are include which show existing On and Off Road systems as well as planned On and Off Road bicycle facilities.

8. **MAG Regional Off-Street System Plan (ROSS) – Creating Non-Motorized Paths/Trails in Existing Corridors – February 2001 (RBF Consulting)** The Regional Off-Street System (ROSS) Plan illustrates a region-wide system of off-street paths/trails for non-motorized transportation. The goal of the Plan is to make bicycling and walking viable options for daily travel trips using off-street opportunities. Throughout the MAG region numerous opportunities for off-street travel exist along area such as canal banks, utility line easements, and flood control channels. The Plan provides basic design guidelines for access, safety, connectivity, user-friendliness, implementation, and funding.

9. **MAG Pedestrian Plan 2000 – Final Report – December 1999 (The Planning Center)** The Pedestrian Plan 2000 update was to outline programs and actions to promote better pedestrian accommodation throughout the Region's transportation system. This document provides flexible design tools, specifically roadside Performance Guidelines to assist MAG member agencies in creating better walking environments within the existing or new roadway network. The purpose of the Plan is to identify and recommend programs and actions that guide and encourage the development of pedestrian areas and facilities and ultimately increase walking as a viable mode of transportation throughout the region. Roadways with "Composite" pedestrian trip activities within E/W Mobility Study area include the following:

Northern Avenue	Dunlap Avenue	Peoria Avenue
Cactus Road	Thunderbird Road	N 7th Street
N 19th Street	N 35th Street	N 59th Street
N 75th Street	N 83rd Street	N 91st Street
N 107th Street		

This Plan describes general design standards, buffer widths, and an action plan with timeframe.

10. **Peoria General Plan, City of Peoria – February 2001 (BRW)** The Peoria General Plan strives to build a synchronous vision of the City's future from the visions of a diverse population. The General Plan is the primary toll for guiding the future development of the City. The General Plan has the following Elements: land use, circulation, economic development, growth areas, revitalization and redevelopment, housing, public services and facilities, recreation and open spaces, environmental resources, water resources, cost of development, safety, and plan administration.

11. **Long Range Transit Plan, City of Peoria – July 2000 (Parsons Brinckhoff)** The Long-Range Transit Plan is designed to serve as a guide for transit investments and decision-making for the next twenty years. The purpose of the Plan is to: update the general plan with a new transit element, provide a vision for future City transit service, develop specific programs and implement steps to improve transit service, and measure public support for specific transit improvements and their wiliness to pay for those improvements. Summary of the "Moderate Plus" Alternative include: implement low or no cost improvements, improve fixed route service to Phoenix service standards, explore outsourcing Dial-a-Ride services, construct moderate capital facility improvements, land use/transportation policies, and further studies.

12. **Bus Book, Valley Metro – (3/19/01 to 11/25/01):** This document shows each route with an accompany time schedule and major stopping points of Valley Metro bus service.

13. **Bus Rapid Transit Program, Valley Metro, City of Phoenix – October 23, 2001 (STV Incorporated)** This document outlines a preliminary operation plan for the proposed Phoenix Bus Rapid Transit (BRT) service, which is schedule to begin service in July 2003. Some of the key elements discussed in the preliminary BRT operations concepts include: proposed BRT routes, BRT frequencies/schedule, BRT operations in 2003, BRT operations after LRT opens in 2006, and other BRT operational issues.

14. **City of Glendale Traffic Count Program ADT – (1994 to 2000):** Average Daily Traffic (ADT) for the years 1994 to 2000. Source of the information is the City of Glendale, City of Phoenix, and Maricopa Association of Governments.

15. **Regional Freeway System – July 2001 Certification – ADOT:** This document maps existing and under construction of both funded and un-funded segments of freeway system in the Phoenix metropolitan area.

16. **City of Glendale Transportation Plan – October 23, 2001 – BRW:** The Glendale Transportation Plan is a guide for the development on transportation in the Glendale Planning Area for the years 2000 through 2025. Current conditions and future prospects are first addressed, and then plans are presented, for each mode of transportation. A funding plan was developed to highlight funding needs and an Election Package has been developed to help meets these needs. An East/West "Super Connector" is suggested on Northern Avenue between Grand Avenue and Loop 303. This Super Street is planned to link central Glendale to growth areas in the western part of the Planning Area. Most additional new lanes will be added west of 91st Avenue. This Plan includes a variety of transit services including the following: expanded evening and weekend local bus service with a minimum of 30-minute headways; expanded dial-a-ride; expand express bus service to additional

neighborhoods; possible light rail service to Metrocenter by 2010; and improvements to enhance and expand bicycle and pedestrian facilities.

Map Data

1. MAG Traffic Analysis Zones

2001 Network w/1541 Zones and TIP01105

2. 2001 24-HR Highway Assignment
3. 2001 Facility Types
4. 2001 Area Types
5. 2001 Number of Lanes
6. 2001 Centroid Locations
7. 2001 Peak Transit Network

2010 Network BG w/ 1541 TAZ

8. 2010 24-HR Highway Assignment
9. 2010 Facility Types
10. 2010 Area Types
11. 2010 Number of Lanes
12. 2010 Centroid Locations
13. 2010 Peak Transit Network

2020 Adopted Plan Network

14. 2020 24-HR Highway Assignment
15. 2020 Facility Types
16. 2020 Area Types
17. 2020 Number of Lanes
18. 2020 Centroid Locations
19. 2020 Peak Transit Network

APPENDIX B

YEAR 2001 TRAFFIC DATA: FACILITY TYPE, AREA TYPE, NUMBER OF LANES, AND EXISTING VOLUMES

East/West Mobility Study

Roadway	From	To	Year 2001 Network Data				
			Facility Type	Area Type	Number of Lanes		24-Hour Volume
					EB/NB	WB/SB	
Northern Avenue	SR-51	16th Street	Arterial	Urban Fringe	2	3	31,100
Northern Avenue	16th Street	12th Street	Arterial	Urban Fringe	2	3	49,300
Northern Avenue	12th Street	7th Street	Arterial	Urban Fringe	2	3	46,100
Northern Avenue	7th Street	Central Avenue	Arterial	Urban	2	3	40,900
Northern Avenue	Central Avenue	7th Avenue	Arterial	Urban	2	3	40,100
Northern Avenue	7th Avenue	19th Avenue	Arterial	Urban Fringe/Urban	2	3	40,100
Northern Avenue	19th Avenue	I-17	Arterial	Urban	3	3	44,500
Northern Avenue	I-17	35th Avenue	Arterial	Urban	2	3	39,700
Northern Avenue	35th Avenue	43rd Avenue	Arterial	Urban	2	3	38,700
Northern Avenue	43rd Avenue	51st Avenue	Arterial	Urban	2	3	37,000
Northern Avenue	51st Avenue	59th Avenue	Arterial	Urban	2	3	33,700
Northern Avenue	59th Avenue	67th Avenue	Arterial	Urban	2	2	29,600
Northern Avenue	67th Avenue	75th Avenue	Arterial	Urban/Suburban	2	2	20,000
Northern Avenue	75th Avenue	83rd Avenue	Arterial	Suburban	2	2	11,100
Northern Avenue	83rd Avenue	91st Avenue	Arterial	Suburban	2	2	9,000
Northern Avenue	91st Avenue	Loop 101	Arterial	Suburban	2	2	12,100
Northern Avenue	Loop 101	99th Avenue	Arterial	Suburban	2	2	16,900
Northern Avenue	99th Avenue	107th Avenue	Arterial	Suburban	1/2	1/2	20,600
Northern Avenue	107th Avenue	El Mirage Avenue	Arterial	Suburban	1/2	1/2	3,800
Northern Avenue	El Mirage Avenue	Dysart Road	Arterial	Suburban/Rural	1	1	5,400
Northern Avenue	Dysart Road	Lichfield Road	Arterial	Suburban/Rural	1	1	3,600
Northern Avenue	Lichfield Road	Reems Road	Arterial	Suburban/Rural	1	1	5,100
Northern Avenue	Reems Road	Sarival Road	Arterial	Rural	1	1	2,800
Northern Avenue	Sarival Road	Loop 303	Arterial	Rural	1	1	2,400
Olive Avenue	12th Street	7th Street	Collector	Urban Fringe	1	1	10,400
Olive Avenue	7th Street	Central Avenue	Arterial	Urban Fringe	2	3	39,300
Olive Avenue	Central Avenue	7th Avenue	Arterial	Urban Fringe	2	3	39,000
Olive Avenue	7th Avenue	19th Avenue	Arterial	Urban Fringe	2	3	39,700
Olive Avenue	19th Avenue	I-17	Arterial	Urban	2/3	3	47,200
Olive Avenue	I-17	35th Avenue	Arterial	Urban	3	3	55,500
Olive Avenue	35th Avenue	43rd Avenue	Arterial	Urban	2	3	39,600
Olive Avenue	43rd Avenue	51st Avenue	Arterial	Urban	2	3	36,100
Olive Avenue	51st Avenue	59th Avenue	Arterial	Urban	2	3	34,600
Olive Avenue	59th Avenue	67th Avenue	Arterial	Urban	2	3	37,200
Olive Avenue	67th Avenue	75th Avenue	Arterial	Urban/Suburban	2	2	26,800
Olive Avenue	75th Avenue	83rd Avenue	Arterial	Suburban	2	2	19,800
Olive Avenue	83rd Avenue	91st Avenue	Arterial	Suburban	2	2	13,900
Olive Avenue	91st Avenue	Loop 101	Arterial	Suburban	2	2	13,900
Olive Avenue	Loop 101	99th Avenue	Arterial	Suburban	2	2	15,300
Olive Avenue	99th Avenue	107th Avenue	Arterial	Suburban	2	2	24,800
Olive Avenue	107th Avenue	El Mirage Avenue	Arterial	Suburban	2	2	10,000
Olive Avenue	El Mirage Avenue	Dysart Road	Arterial	Suburban	1	1	3,600
Olive Avenue	Dysart Road	Lichfield Road	Arterial	Rural	1	1	4,600
Olive Avenue	Lichfield Road	Reems Road	Arterial	Rural	1	1	5,100
Olive Avenue	Reems Road	Sarival Road	Arterial	Rural	1	1	2,800
Olive Avenue	Sarival Road	Loop 303	Arterial	Rural	1	1	2,400
Peoria Avenue	7th Avenue	19th Avenue	Collector	Urban Fringe	1	1	11,700
Peoria Avenue	19th Avenue	I-17	Arterial	Urban	2/3	2	45,400
Peoria Avenue	I-17	35th Avenue	Arterial	Urban	3	3	51,800
Peoria Avenue	35th Avenue	43rd Avenue	Arterial	Urban	2	3	36,400
Peoria Avenue	43rd Avenue	51st Avenue	Arterial	Urban/Urban Fringe	2	3	36,700
Peoria Avenue	51st Avenue	59th Avenue	Arterial	Urban/Urban Fringe	2	3	34,300
Peoria Avenue	59th Avenue	67th Avenue	Arterial	Urban/Urban Fringe	2	3	34,700
Peoria Avenue	67th Avenue	75th Avenue	Arterial	Urban Fringe/Suburban	2	2	28,400
Peoria Avenue	75th Avenue	83rd Avenue	Arterial	Suburban	2	2	30,900
Peoria Avenue	83rd Avenue	91st Avenue	Arterial	Suburban	2	2	22,100
Peoria Avenue	91st Avenue	Loop 101	Arterial	Suburban	2	2	22,100
Peoria Avenue	Loop 101	99th Avenue	Arterial	Suburban	2	2	29,800
Peoria Avenue	I	103rd Avenue	Arterial	Suburban	1	1	11,900
Peoria Avenue	103rd Avenue	107th Avenue	Arterial	Suburban	1	1	8,500
Peoria Avenue	El Mirage Avenue	Dysart Road	Arterial	Suburban	1	1	500
Peoria Avenue	Dysart Road	Lichfield Road	Arterial	Rural	1	1	700
Peoria Avenue	Lichfield Road	Reems Road	Arterial	Rural	1	1	1,000
Peoria Avenue	Reems Road	Sarival Road	Arterial	Rural	1	1	500
Peoria Avenue	Sarival Road	Loop 303	Arterial	Rural	1	1	400
Cactus Road	SR-51	24th Street	Arterial	Urban Fringe	3	3	47,600
Cactus Road	24th Street	Cave Creek Rd.	Arterial	Urban Fringe	3	3	56,800

East/West Mobility Study

Roadway	From	To	Year 2001 Network Data				
			Facility Type	Area Type	Number of Lanes		24-Hour Volume
					EB/NB	WB/SB	
Cactus Road	19th Avenue	I-17	Arterial	Urban Fringe/Urban	2	2	35,200
Cactus Road	I-17	35th Avenue	Arterial	Urban Fringe	2	3	44,000
Cactus Road	35th Avenue	43rd Avenue	Arterial	Urban Fringe/Urban	2	3	36,700
Cactus Road	43rd Avenue	51st Avenue	Arterial	Urban Fringe/Urban	2	3	36,100
Cactus Road	51st Avenue	59th Avenue	Arterial	Urban Fringe	2	2/3	31,000
Cactus Road	59th Avenue	67th Avenue	Arterial	Urban Fringe	2	2	28,300
Cactus Road	67th Avenue	75th Avenue	Arterial	Urban Fringe	2	2	27,000
Cactus Road	75th Avenue	83rd Avenue	Arterial	Urban Fringe	2	2	22,200
Cactus Road	83rd Avenue	91st Avenue	Arterial	Urban Fringe	1/2	1/2	9,400
Cactus Road	Dysart Road	Lichfield Road	Arterial	Rural	1	1	600
Cactus Road	Lichfield Road	Reems Road	Arterial	Rural	1	1	200
Cactus Road	Reems Road	Sarival Road	Arterial	Rural	1	1	20
Cactus Road	Sarival Road	Loop 303	Arterial	Rural	1	1	10
Thunderbird Road	Cave Creek Rd.	7th Street	Arterial	Urban Fringe	3	3	45,900
Thunderbird Road	7th Street	19th Avenue	Arterial	Urban Fringe	3	3	47,100
Thunderbird Road	19th Avenue	I-17	Arterial	Urban Fringe	2	2	35,300
Thunderbird Road	I-17	35th Avenue	Arterial	Urban Fringe	2	2	36,900
Thunderbird Road	35th Avenue	43rd Avenue	Arterial	Urban Fringe	3	3	40,500
Thunderbird Road	43rd Avenue	51st Avenue	Arterial	Urban Fringe	3	3	38,000
Thunderbird Road	51st Avenue	59th Avenue	Arterial	Urban Fringe	2	3	37,900
Thunderbird Road	59th Avenue	67th Avenue	Arterial	Urban Fringe	2	3	27,700
Thunderbird Road	67th Avenue	75th Avenue	Arterial	Urban Fringe	2	2	27,400
Thunderbird Road	75th Avenue	83rd Avenue	Arterial	Urban Fringe	2	2	24,300
Thunderbird Road	83rd Avenue	Loop 101	Arterial	Urban Fringe	2	2	33,300
Thunderbird Road	Loop 101	91st Avenue	Arterial	Urban Fringe	2	2	33,600
Thunderbird Road	91st Avenue	99th Avenue	Arterial	Urban Fringe	2	2	23,300
Thunderbird Road	99th Avenue	103rd Avenue	Arterial	Suburban	2	2	10,500
Thunderbird Road	103rd Avenue	107th Avenue	Arterial	Suburban	2	2	11,800
Waddell Road	Grand Avenue	El Mirage Avenue	Arterial	Suburban	1	1	8,300
Waddell Road	El Mirage Avenue	Dysart Road	Arterial	Suburban	1	1	6,200
Waddell Road	Dysart Road	Lichfield Road	Arterial	Rural	1	1	4,400
Waddell Road	Lichfield Road	Reems Road	Arterial	Rural	1	1	4,400
Waddell Road	Reems Road	Sarival Road	Arterial	Rural	1	1	4,800
Waddell Road	Sarival Road	Loop 303	Arterial	Rural	1	1	4,100
SR-51	Northern Avenue	Shea Blvd.	Freeway	Urban Fringe	3	3/4	167,500
SR-51	Shea Blvd.	Cactus Road	Freeway	Urban Fringe	3	3	106,100
SR-51	Cactus Road	Thunderbird Road	Freeway	Urban Fringe	3	3	77,900
32nd Street	SR-51	Shea Blvd.	Arterial	Urban Fringe	3	2	11,500
32nd Street	Shea Blvd.	Cactus Road	Arterial	Urban Fringe	3	2	20,400
32nd Street	Cactus Road	Thunderbird Road	Arterial	Urban Fringe	3	2	24,800
24th Street	Shea Blvd.	Cactus Road	Collector	Urban Fringe	1	1	9,500
Cave Creek Road	Olive Avenue	Dunlap Road	Arterial	Urban Fringe	2	2	32,400
Cave Creek Road	Dunlap Road	Cactus Road	Arterial	Urban Fringe	2	2	39,800
12th Street	Northern Avenue	Olive Avenue	Collector	Urban Fringe	1	1	11,700
12th Street	Olive Avenue	Dunlap Road	Collector	Urban Fringe	1	1	9,900
7th Street	Northern Avenue	Olive Avenue	Arterial	Urban Fringe	3	2	39,200
7th Street	Olive Avenue	Dunlap Road	Arterial	Urban Fringe	3	2	
7th Street	Dunlap Road	Thunderbird Road	Arterial	Urban Fringe	3	2/3	47,000
Central Avenue	Northern Avenue	Olive Avenue	Arterial	Urban Fringe	2	1	30,100
Central Avenue	Olive Avenue	Dunlap Road	Arterial	Urban Fringe	2	1	
7th Avenue	Northern Avenue	Olive Avenue	Arterial	Urban Fringe	3	2	36,600
7th Avenue	Olive Avenue	Dunlap Road	Arterial	Urban Fringe	3	2	
7th Avenue	Dunlap Road	Peoria Avenue	Collector	Urban Fringe	2	2	11,700
19th Avenue	Northern Avenue	Olive Avenue	Arterial	Urban Fringe	3	2	39,700
19th Avenue	Olive Avenue	Dunlap Road	Arterial	Urban	3	2	41,100
19th Avenue	Dunlap Road	Peoria Avenue	Arterial	Urban	3	2	42,600
19th Avenue	Peoria Avenue	Cactus Road	Arterial	Urban/Urban Fringe	3	2	39,300
19th Avenue	Cactus Road	Thunderbird Road	Arterial	Urban Fringe	3	2	44,800
I-17	Northern Avenue	Olive Avenue	Freeway	Urban	3	3	
I-17	Olive Avenue	Peoria Avenue	Freeway	Urban	3	3	
I-17	Peoria Avenue	Cactus Road	Freeway	Urban	3	3	
I-17	Cactus Road	Thunderbird Road	Freeway	Urban Fringe	3	3	
35th Avenue	Northern Avenue	Olive Avenue	Arterial	Urban	3	2	39,100
35th Avenue	Olive Avenue	Peoria Avenue	Arterial	Urban	2	2	46,100
35th Avenue	Peoria Avenue	Cactus Road	Arterial	Urban	3	2	36,000

East/West Mobility Study

Roadway	From	To	Year 2001 Network Data				
			Facility Type	Area Type	Number of Lanes		24-Hour Volume
					EB/NB	WB/SB	
43rd Avenue	Northern Avenue	Olive Avenue	Arterial	Urban	3	2	37,600
43rd Avenue	Olive Avenue	Peoria Avenue	Arterial	Urban	3	2	37,300
43rd Avenue	Peoria Avenue	Cactus Road	Arterial	Urban	3	2	35,300
43rd Avenue	Cactus Road	Thunderbird Road	Arterial	Urban Fringe	3	2	34,900
51st Avenue	Northern Avenue	Olive Avenue	Arterial	Urban	3	2	37,400
51st Avenue	Olive Avenue	Peoria Avenue	Arterial	Urban	2/3	2	34,600
51st Avenue	Peoria Avenue	Cactus Road	Arterial	Urban Fringe	3	2	35,300
51st Avenue	Cactus Road	Thunderbird Road	Arterial	Urban Fringe	3	2	41,400
59th Avenue	Northern Avenue	Olive Avenue	Arterial	Urban	2	2	30,400
59th Avenue	Olive Avenue	Peoria Avenue	Arterial	Urban	2	2	33,100
59th Avenue	Peoria Avenue	Cactus Road	Arterial	Urban Fringe	3	2/3	38,200
59th Avenue	Cactus Road	Thunderbird Road	Arterial	Urban Fringe	3	2	34,500
67th Avenue	Northern Avenue	Olive Avenue	Arterial	Urban	2	2	26,000
67th Avenue	Olive Avenue	Peoria Avenue	Arterial	Urban	2	2	25,500
67th Avenue	Peoria Avenue	Cactus Road	Arterial	Urban Fringe	2	2	27,000
67th Avenue	Cactus Road	Thunderbird Road	Arterial	Urban Fringe	2	2	26,400
75th Avenue	Northern Avenue	Olive Avenue	Arterial	Suburban	2	2	25,700
75th Avenue	Olive Avenue	Peoria Avenue	Arterial	Suburban	2	2	25,800
75th Avenue	Peoria Avenue	Cactus Road	Arterial	Urban Fringe	2	2	23,500
75th Avenue	Cactus Road	Thunderbird Road	Arterial	Urban Fringe	1/2	1/3	19,300
83rd Avenue	Northern Avenue	Olive Avenue	Arterial	Suburban	1	1	17,500
83rd Avenue	Olive Avenue	Peoria Avenue	Arterial	Suburban	1	1	16,300
83rd Avenue	Peoria Avenue	Cactus Road	Arterial	Urban Fringe	2	2	24,500
83rd Avenue	Cactus Road	Thunderbird Road	Arterial	Urban Fringe	2	2	22,600
91st Avenue	Northern Avenue	Olive Avenue	Arterial	Suburban	2	2	20,300
91st Avenue	Olive Avenue	Peoria Avenue	Arterial	Suburban	2	2	14,400
91st Avenue	Peoria Avenue	Grand Avenue	Arterial	Urban Fringe	1/2	1/2	9,300
91st Avenue	Grand Avenue	Cactus Road	Arterial	Urban Fringe	1	1	
Loop 101	Northern Avenue	Olive Avenue	Freeway	Suburban	3	3	95,100
Loop 101	Olive Avenue	Peoria Avenue	Freeway	Suburban	3	3	92,800
Loop 101	Peoria Avenue	Grand Avenue	Freeway	Urban Fringe	3	3	89,400
Loop 101	Grand Avenue	Thunderbird Road	Freeway	Urban Fringe	3	3	73,000
99th Avenue	Northern Avenue	Olive Avenue	Arterial	Suburban	1	1	10,800
99th Avenue	Olive Avenue	Peoria Avenue	Arterial	Suburban	2	2	12,700
99th Avenue	Peoria Avenue	Grand Avenue	Arterial	Urban Fringe	2	2	18,300
99th Avenue	Grand Avenue	Thunderbird Road	Arterial	Urban Fringe	2	2	27,700
103rd Avenue	Peoria Avenue	Grand Avenue	Collector	Suburban	1	1	7,000
103rd Avenue	Grand Avenue	Thunderbird Road	Collector	Suburban	1	1	8,600
107th Avenue	Northern Avenue	Olive Avenue	Arterial	Suburban	2	2	13,900
107th Avenue	Olive Avenue	Peoria Avenue	Arterial	Suburban	1	1	12,300
107th Avenue	Peoria Avenue	Grand Avenue	Arterial	Suburban	1	1	14,900
107th Avenue	Grand Avenue	Thunderbird Road	Arterial	Suburban	2	2	18,400
El Mirage Road	Northern Avenue	Olive Avenue	Arterial	Suburban	1	1	9,300
El Mirage Road	Olive Avenue	Peoria Avenue	Arterial	Suburban	1	1	8,600
El Mirage Road	Peoria Avenue	Waddell Road	Arterial	Suburban	1	1	9,800
Dysart Road	Northern Avenue	Olive Avenue	Arterial	Suburban/Rural	1	1	8,200
Dysart Road	Olive Avenue	Peoria Avenue	Arterial	Suburban	1	1	6,900
Dysart Road	Peoria Avenue	Cactus Road	Arterial	Rural	1	1	6,600
Dysart Road	Cactus Road	Waddell Road	Arterial	Rural	1	1	7,300
Lichfield Road	Northern Avenue	Olive Avenue	Arterial	Rural	1	1	7,400
Lichfield Road	Olive Avenue	Peoria Avenue	Arterial	Rural	1	1	6,700
Lichfield Road	Peoria Avenue	Cactus Road	Arterial	Rural	2	2	7,200
Lichfield Road	Cactus Road	Waddell Road	Arterial	Rural	1	1	7,000
Reems Road	Northern Avenue	Olive Avenue	Arterial	Rural	1	1	2,400
Reems Road	Olive Avenue	Peoria Avenue	Arterial	Rural	1	1	2,900
Reems Road	Peoria Avenue	Cactus Road	Arterial	Rural	1	1	2,700
Reems Road	Cactus Road	Waddell Road	Arterial	Rural	1	1	2,900
Sarival Avenue	Northern Avenue	Olive Avenue	Arterial	Rural	1	1	4,600
Sarival Avenue	Olive Avenue	Peoria Avenue	Arterial	Rural	1	1	3,300
Sarival Avenue	Peoria Avenue	Cactus Road	Arterial	Rural	1	1	3,000
Sarival Avenue	Cactus Road	Waddell Road	Arterial	Rural	1	1	3,000
Loop 303	Northern Avenue	Olive Avenue	Arterial	Rural	1	1	3,800
Loop 303	Olive Avenue	Peoria Avenue	Arterial	Rural	1	1	3,400
Loop 303	Peoria Avenue	Cactus Road	Arterial	Rural	1	1	3,900
Loop 303	Cactus Road	Waddell Road	Arterial	Rural	1	1	3,900

East/West Mobility Study

			Year 2001 Network Data				
Roadway	**From**	**To**	**Facility Type**	**Area Type**	**Number of Lanes**		**24-Hour Volume**
					EB/NB	**WB/SB**	
Grand Avenue	67th & Northern	75th & Olive	Arterial	Urban/Suburban	3	3	32,300
Grand Avenue	75th & Olive	83rd & Peoria	Arterial	Suburban	3	3	34,200
Grand Avenue	83rd & Peoria	91st Avenue	Arterial	Urban Fringe	3	3	34,800
Grand Avenue	91st Avenue	Loop 101	Arterial	Urban Fringe	3	3	37,000
Grand Avenue	Loop 101	99th Avenue	Arterial	Suburban	3	3	53,700
Grand Avenue	99th Avenue	103rd Avenue	Arterial	Suburban	3	3	48,100
Grand Avenue	103rd Avenue	107th Avenue	Arterial	Suburban	3	3	42,100
Grand Avenue	107th Avenue	Waddell Road	Arterial	Suburban	3	3	56,100

APPENDIX C

YEAR 2001 SOCIO-ECONOMIC DATA

2001 Socio-Economic Data

TAZ	Res Pop in HH	Res Pop in Group Qtr	Transient Pop	Seasonal Pop	Res HH	Group Qtr HH	Transient HH	Seasonal HH	Other Emp	Public Emp	Retail Emp	Office Emp	Ind Emp
180	0	0	0	0	0	0	0	0	3	5	1	5	1
181	0	0	0	0	0	0	0	0	16	0	0	0	0
183	0	0	0	0	0	0	0	0	5	8	2	9	2
184	6	0	0	0	2	0	0	0	23	0	7	0	0
187	3	0	0	1	1	0	0	1	0	0	0	0	0
188	16	0	0	0	5	0	0	0	174	0	0	0	11
241	289	1	0	3	75	0	0	2	12	124	129	8	27
243	2471	25	0	13	643	6	0	7	12	1	217	0	4
244	438	0	0	636	113	0	0	332	1	8	21	0	0
245	0	0	0	1	0	0	0	1	24	0	0	1	0
246	0	0	0	0	0	0	0	0	1	1	0	1	12
247	0	0	0	0	0	0	0	0	0	1	0	0	15
248	2500	251	101	239	1556	59	74	124	355	311	666	3	1
251	1970	0	0	226	1204	0	0	117	245	45	10	7	0
252	117	0	0	61	71	0	0	32	0	62	0	14	0
253	1411	0	0	135	862	0	0	71	31	10	13	32	0
256	4710	352	0	617	2879	84	0	322	234	194	788	2550	1
257	3859	167	0	457	2359	40	0	238	130	80	681	125	0
258	3423	0	0	272	2095	0	0	141	320	79	46	81	0
345	2547	191	40	7	895	45	30	4	173	4	11	1176	93
346	1954	218	0	214	683	51	0	112	78	14	133	426	267
347	3779	5	0	1	1334	1	0	1	4	22	344	27	17
348	4494	30	74	396	1578	7	55	206	731	566	102	133	66
351	6650	0	0	0	2340	0	0	0	133	50	20	37	0
352	6403	268	0	155	2249	64	0	81	28	5	201	93	3
354	3793	33	0	0	1337	8	0	0	55	84	307	12	7
355	6917	7	0	243	2429	2	0	126	289	50	740	65	22
356	3709	3	0	3	1345	1	0	2	1	12	10	1	21
357	3467	191	0	126	1243	45	0	66	72	4	8	0	294
358	3376	2	0	80	1219	0	0	42	13	46	50	0	15
359	665	0	0	1	243	0	0	1	7	90	5	0	2
360	5862	219	0	48	2118	51	0	25	206	553	588	0	207
361	3344	4	0	2	1211	1	0	1	4	11	220	0	228
362	1767	0	0	226	635	0	0	117	49	23	637	11	1007
363	158	0	0	0	56	0	0	0	19	50	833	0	3
364	158	0	0	1	56	0	0	1	408	417	1	2	199
365	7162	0	0	55	2580	0	0	29	77	23	106	1	417
366	43	0	0	0	15	0	0	0	134	51	74	21	388
385	1804	30	0	41	639	7	0	21	361	70	422	166	2
386	5818	8	0	2	2059	2	0	1	165	31	699	113	5
389	7464	226	0	13	2647	54	0	7	2114	68	1559	703	241
390	5659	31	0	8	2002	7	0	4	867	148	434	29	30
391	2315	0	0	7	814	0	0	4	150	26	199	19	4
400	875	0	0	0	257	0	0	0	4	0	0	0	0
404	16	0	0	0	6	0	0	0	28	1	168	2	21
405	1	0	0	0	0	0	0	0	3	0	101	18	39
409	0	0	0	0	0	0	0	0	61	17	12	35	8
410	100	0	0	1	37	0	0	1	43	10	9	0	0
436	3132	0	9	145	1193	0	7	76	130	3	467	51	149
437	3848	0	0	1	1479	0	0	1	85	148	1290	151	52
438	8953	368	0	129	3422	87	0	68	212	1307	173	449	247
443	6050	3	0	1	2327	1	0	1	73	58	721	0	479
444	5190	16	0	16	1977	4	0	8	225	11	371	6	445
449	7027	19	0	11	2704	5	0	6	151	7	626	2	1071
450	5514	244	0	3	2121	58	0	2	187	565	596	164	223
591	2738	11	0	1	1030	3	0	1	13	0	324	928	0
593	5881	16	0	143	2213	4	0	75	123	150	780	7	354
595	5826	9	94	7	2176	2	69	4	125	1094	1169	131	416
597	6160	7	0	21	2316	2	0	11	115	87	130	81	307
605	2675	29	0	0	1112	7	0	0	85	67	106	7	163
606	5481	7	0	1	2278	2	0	1	4	51	106	983	110
607	4780	54	0	10	1987	13	0	5	34	2	23	30	603
608	6265	5	0	20	2604	1	0	10	14	2	892	249	54
609	7787	0	359	2	3237	0	268	1	318	23	1602	115	581
610	4113	41	266	2	1709	10	198	1	452	443	934	214	7100
611	9597	0	838	30	4016	0	623	16	7	1	450	1076	403
612	5259	63	181	4	2186	15	134	2	201	49	6789	1208	426
613	2359	0	358	200	994	0	267	105	436	1998	665	7397	2599

2001 Socio-Economic Data

TAZ	Res Pop in HH	Res Pop in Group Qtr	Transient Pop	Seasonal Pop	Res HH	Group Qtr HH	Transient HH	Seasonal HH	Other Emp	Public Emp	Retail Emp	Office Emp	Ind Emp
613	2359	0	358	200	994	0	267	105	436	1998	665	7397	2599
614	7546	0	720	11	3136	0	535	6	280	904	1726	3518	1929
615	3070	4	0	1	1271	1	0	1	30	73	547	11	17
616	4145	210	0	82	1711	50	0	43	40	81	307	388	14
617	6953	82	0	157	2884	19	0	82	253	36	1378	679	208
618	3875	32	0	17	1608	7	0	9	8	4	40	188	533
619	3209	0	0	39	1332	0	0	20	88	540	18	23	3
620	374	38	0	1	154	9	0	1	854	0	220	170	101
621	2399	0	0	6	991	0	0	3	247	11	779	126	65
622	692	171	0	1	284	41	0	1	1	2	72	1775	1103
623	3298	0	0	12	1356	0	0	6	332	107	365	32	12
624	7108	14	0	54	2957	3	0	28	528	155	192	69	12
625	16	0	0	0	6	0	0	0	0	5	2	1	1
626	3999	9	426	9	1661	2	317	5	99	130	1110	953	16
627	4987	30	0	10	2068	7	0	5	429	338	71	52	108
628	4354	10	0	155	1800	2	0	81	136	154	15	254	162
629	7850	6	0	21	3259	1	0	11	40	39	29	1205	42
632	6239	18	0	3	2347	4	0	2	1003	36	391	275	162
633	7295	148	0	7	2742	36	0	4	39	235	117	608	484
634	2005	0	0	4	755	0	0	2	28	0	4	7	0
635	2502	6	0	2	942	1	0	1	17	248	23	555	18
Total	**302,064**	**3,932**	**3,466**	**5,630**	**120,237**	**932**	**2,577**	**2,945**	**15,305**	**12,539**	**36,194**	**30,064**	**24,452**